In writing this text, it has been my goal to provide preservice early childhood teachers with a foundation of knowledge they will need to develop classrooms and learning environments where children’s language development will be enhanced. *Language Development in Early Childhood*, Fourth Edition, is a book about language development from birth through age 8. It is a foundational text that incorporates theory and research as well as guidelines for enhancing language development in early childhood settings.

This text provides a comprehensive view of language development, focusing on the development of phonological, semantic, syntactic, morphemic, and pragmatic language knowledge. Development of children’s knowledge of written language is also included as part of children’s language development. Although this text is designed for use as the main text in an undergraduate language development course for majors in early childhood education or child development, it could also be used as a supplementary text in early childhood language arts or reading methods courses.

**NEW TO THIS EDITION**

For this fourth edition, each chapter has been updated and expanded to reflect recent research and best practice. Revisions in wording and chapter structure have been made to increase the text’s readability and improve the reader’s comprehension. Also new to this edition are:

- Additional vignettes and examples of children’s oral and written language to further illustrate specific aspects of language development
- Updated research on the theoretical foundations of language development
- Increased discussion of the effects of culture on language development and implications for teachers
- Added Family Connection features to Chapters 5, 7, 9, and 11
• Updated Teacher Resources for Chapters 3, 5, 7, 9, 11, and 14
• Added checklists for teachers to use in observing and documenting
  children’s language competencies throughout the kindergarten year
• Updated information on assessment tools and procedures in Chapter 12

The text begins with three chapters that address general language issues: Chapter 1, *Language in Our Lives;* Chapter 2, *Theoretical Perspectives and Contexts of Language Development;* and Chapter 3, *Language Development Among Children of Linguistic Diversity.* Each of these chapters introduces foundational concepts and perspectives that are built on in subsequent chapters.

Chapters 4 to 11 focus on the different ages of children and guidelines for enhancing language development at each age in early childhood settings. At each age, from infancy through primary years, language development is detailed and guidelines are provided for enhancing children’s language development. Professors and students will find this feature beneficial, as it strengthens students’ understanding of the ways in which children’s language develops in early childhood settings. Information and resources on using symbolic gestures and signing with infants and toddlers are included in the revision of Chapters 4 and 5. Specific guidelines for enhancing language development of English language learners are included in Chapters 5, 7, and 9. Chapter 12 emphasizes assessment processes involved in observing, screening, diagnosing, and documenting children’s language development. Chapter 13 focuses on language disorders and includes guidelines for teachers working with children with special needs, including autism. Chapter 14 emphasizes the role of school–home connections in enhancing children’s language development and learning. The Appendix supplements Chapters 3 and 14 with a listing of common greetings and expressions in different languages for early childhood teachers to use in establishing rapport and school–home connections with families of second language learners.

**FOR THE PROFESSOR**

In each chapter are three features that will be useful to you and your students. Each chapter opens with Learning Outcomes, which highlight key concepts to guide readers. The Chapter Review section provides questions and terms to use in reviewing chapter content. The Chapter Extension Activities at the end of each chapter provide opportunities to apply chapter content through observation or through interaction with children or practicing teachers. The *Online Instructor's Manual* provides additional suggestions for in-class activities, extension activities, and useful forms, and the *Online Test Bank* includes a variety of assessment items. The *Online PowerPoint™ Slides* present the main concepts from each chapter and can be adapted for your own use.
You can download the electronic *Online Instructor’s Manual, Online Test Bank,* and *Online PowerPoint™ Slides* from www.pearsonhighered.com. First click on *Educators,* and then click on *Download Instructor’s Resources.*

**ACKNOWLEDGMENTS**

First, I would like to thank my husband and children for encouraging me in this fourth edition. I am also deeply indebted to my nieces and my granddaughter for the privilege of witnessing their language development in all of its passion and joy. I deeply appreciate the support and encouragement from my colleagues, administrators, and students at Northeastern Illinois University. I am also indebted to the many children and teachers whose anecdotes, language examples, and photos appear in this text and to the parents who graciously shared their children with me. A special thanks is extended to Elfriede Weber, director, and the teachers and staff at the Northeastern Illinois University Child Care Center for welcoming me into their center.

In the preparation of this fourth edition, I have deeply appreciated the guidance and insightful contributions of Julie Peters, senior acquisitions editor in early childhood education at Pearson. I would also like to thank the following reviewers for their thoughtful comments: Lisa M. Crane, University of Illinois at Urbana–Champaign; Mary Blake Jones, College of Charleston; Colleen Lelli, Cabrini College; and Kathleen Martin, University of Alabama at Birmingham.
Learning Outcomes
After reading this chapter you should be able to
- Describe the range of language competencies needed by children
- Explain each of the five aspects of language knowledge
- Distinguish between the three levels of language knowledge
- Identify the receptive and expressive modes of oral and written language
- Explain the critical role of children’s oral language competencies in school settings

In the toddler room, Adam and his teacher are sharing a book in the library corner during independent activity time. As his teacher turns the pages, Adam talks about the pictures and responds to questions his teacher asks.

In the preschool room, Kiesha is at the easel, painting a picture. When she finishes, she makes some letter-like forms with her paintbrush and then says, “That’s my name.”

In the kindergarten room, Juan is participating in “show-and-tell,” describing the special rock that he found when he went for a walk with his dad. He is especially fascinated by the silvery sparkles running through the rock and says, “See the sparkles here, and here, and here” as he points to his rock.

In each of these instances, children used language effectively to communicate. Adam was engaged in the storybook sharing, taking an active role in responding to the storybook content. Kiesha showed her awareness that graphic symbols have meaning, representing her name, in this case. Juan communicated the special features of the object he had brought for show-and-tell.
YOUR ROLE AS AN EARLY CHILDHOOD PROFESSIONAL

As an early childhood professional, you will have many interactions with children that are based in oral and written language. You will be talking with children as they interact in your classroom, engaging in the learning activities you provide. As you read books to and with children, you will introduce the children to written language. When you create classroom posters and other displays involving print, you are showing children how written language can be used to communicate. Through these interactions, you will have a significant influence on children's language development. As you prepare for your role as an early childhood professional, it is important that you acquire knowledge of how children develop language competencies. This knowledge will enable you to provide guidance, support, and mediation to enhance children's development. Throughout this text, the emphasis is on increasing your knowledge of language development as well as strategies and activities that will enhance children's language development. This chapter provides an overview of the role of language in our lives and the different aspects of language knowledge. The chapter closes with a description of research that highlights the relationship between oral and written language.

BECOMING SPEAKERS, READERS, AND WRITERS

How did the children in the opening vignette learn to communicate using language? Did it occur automatically without any direct influence from the environment? Is learning to read different from learning to speak? How do children become fluent in more than one language? These questions have sparked intense research and debate for many years. Gradually we are coming to better understand the ways in which children become effective speakers, listeners, readers, and writers. Throughout this text, we will explore the ways in which children become effective communicators and the ways in which we, as teachers, can enhance their development of language. This text differs from other language development texts in its attention to language as communication rather than a focus on speech production and the development of articulation. This approach recognizes that language is a medium of communication with others and within us. The focus here will be on the years from birth through age 8, an age span commonly referred to as the early childhood years. While this text will include descriptions of activities to enhance language development, it is not intended to be a language arts methods text. The language development approach of this text examines the development of both oral and written language within settings in early childhood. Oral language development and written language development are interrelated processes that culminate in children's communicative competencies.

Language is essential to society. It forms the foundation of our perceptions, communications, and daily interactions. It is a system of symbols by which we categorize,
organize, and clarify our thinking (Stice, Bertrand, & Bertrand, 1995). Through language, we represent the world and learn about the world. Without language, a society and its culture cannot exist.

To be able to function successfully in a society and its culture (and subcultures), children need to develop a wide range of language competencies. Not only do children need to acquire an oral language, they need to be able to use that language effectively in a variety of settings. Further, in literate cultures, children need to develop competencies in using written language as well. Throughout life, people communicate in a variety of settings: talking on the phone with friends, interacting with a store clerk as they purchase groceries, listening to a radio talk show, and using language in professional or educational settings, such as an attorney in a court of law or a college professor and his students in a university classroom. Our language competencies allow us to participate effectively in a variety of social events and occupational settings and in our daily routines.

There is no one standard of communicative competency that teachers should encourage children to attain. Instead, it is important for teachers to recognize that children will need a wide range of communication competencies to ensure their effectiveness in a variety of settings throughout their lives.

Children’s communicative competencies involve both receptive and expressive language. **Receptive language** refers to a child’s comprehension of words (oral or written): when a specific word is used, the child knows what it refers to or represents. **Expressive language** refers to a child’s production of language to communicate. This develops orally first during social interactions and as a child’s speech mechanisms mature allowing the child to gain control over producing specific speech sounds. In literate cultures, children also develop expressive written language as they learn how to communicate using the visual symbol system of their specific culture, e.g., the 26 letters of the English alphabet.

Receptive language development and expressive language development are closely related. While linguists and child development educators agree that receptive language begins to develop prior to expressive language, there is little agreement regarding how long expressive language development lags behind receptive language development (Owens, 1988). The relation between the development of receptive and expressive language appears to be a dynamic one, influenced by a child’s specific developmental level, each aspect of language knowledge, and learning environment.

**ASPECTS OF LANGUAGE KNOWLEDGE**

When children are acquiring language, they are developing five different aspects, or components, of language knowledge: phonological, semantic, syntactic, morphemic, and pragmatic. Each of these aspects refers to a specific domain of language knowledge; however, the aspects do not develop in isolation from each other. Each of these aspects of language knowledge is present in any interaction in which language is
used. Initially, a child’s knowledge of the aspects or components of language will be only receptive. This means the child will perceive the specific characteristics of language but will not be able to produce language that demonstrates this knowledge. In the sections that follow, each of the five aspects of language knowledge is described, along with examples illustrating each aspect.

**Phonological Knowledge**

As children hear and perceive oral language, they learn that language is embedded in a sound–symbol system. **Phonological knowledge** refers to knowledge about sound–symbol relations in a language. A **phoneme** is the smallest linguistic unit of sound, which is combined with other phonemes to form words. Phonemes consist of sounds that are considered to be a single perceptual unit by a listener, such as the /m/ sound in the word *mother* (Goodman, 1993; Hayes, Ornstein, & Gage, 1987).

**How phonological knowledge develops.** Children’s development of phonological knowledge is fostered by their perceptual ability to distinguish sounds and also by the ways in which language is used around them. Young infants about 2 months of age have been found to be able to distinguish between a /p/ sound and a /b/ sound long before they are able to produce those sounds. Children’s discrimination of sounds precedes their ability to produce those same sounds, due to the complex coordination of the speech mechanism in making those sounds.

In every language, some speech sounds are more important than others. Gradually, young children learn to discriminate and produce the speech sounds that are found in their home language. For example, in English, the sounds represented by the letters /l/ and /r/ are perceived as significantly different phonemes. In contrast, the Japanese language does not distinguish between the /l/ and the /r/. Consequently, when native Japanese speakers learn English, they have difficulty articulating English words such as *rate* and *late*. Another example of the perception of significant differences in similar sounds is found in situations in which native English speakers are learning Spanish. In Spanish, /r/ and /rr/ represent different phonemes, as in *pero* (but) and *perro* (dog). For English speakers learning Spanish, this is confusing when the oral pronunciation of the two phonemes represented by *r* and *rr* seems indistinguishable (Goodman, 1993).

Phonological knowledge does not develop in isolation from other aspects of language knowledge. Learning to distinguish between similar-sounding words, such as *can* and *car*, is facilitated by the different ways in which those two words are used in meaningful contexts. The phonemic differences between the two words become meaningful because the two words are used to refer to different objects and actions.

Children’s phonological knowledge during infancy and toddlerhood is evident when children produce and distinguish between the sounds used in their home languages in communicating with those around them. As children move into the preschool years, they may acquire a more conscious awareness of distinct speech sounds in their language and begin to deliberately manipulate their language. This
is known as phonological awareness (Gillon, 2004). This conscious awareness of speech sounds contributes significantly to children’s understanding of the relation between speech and print. The development of literacy skills requires that children be able to use symbols to represent the sounds of their language in writing and to decode the symbols when reading. Children who are unable to consciously focus on or segment the sounds in a word may experience difficulty in learning to read and write (Lieberman, 1973, in Scarborough, 2002).

Prosodic features. In addition to the perception of sounds in a language, young children notice differences in the way sounds are used in a language to add meaning to what is said. Prosodic features in a language represent the way something is said. These features have both acoustic or sound properties and psychological or emotional properties. For example, “they’re coming” can be said in different ways to indicate a statement or a question. It can also be said in a way that conveys a sense of boredom, excitement, or dread. Specific prosodic features include intonation, loudness, tempo, and rhythm (Crystal, 1987; deVilliers & deVilliers, 1978; Goodman, 1993; Sandler & Lillo-Martin, 2005).

Young children acquire knowledge of these prosodic features as well as the specific sounds used in a language through interactions with people in their environment. Children’s auditory perception of these prosodic features contributes to both their phonological knowledge and their subsequent semantic knowledge. Infants’ perception of the speech intonation of those around them is evident when they begin to babble and appear to mimic the intonation of others. Infants learn to sense when their parent or caregiver is happy, excited, calm, tense, or angry from the intonation, loudness, tempo, or rhythm of the adult’s speech. Prosodic features are also communicated in sign language, through facial expression, body posture, and rhythmic signing (Sandler & Lillo-Martin, 2005).

Children also become aware of the prosodic features of speech as they interact with their parents and caregivers in storybook sharing. As an adult directs a child’s attention to a storybook by reading the text or simply talking about the pictures, each of the prosodic features is employed in sharing the story with the child. For example, when an adult reads the longtime favorite story “Goldilocks and the Three Bears,” she typically uses different “voices” for each of the bears: a loud, gruff voice for the papa bear; a gentle, moderate voice for the mama bear; and a tiny, squeaky voice for the baby bear.

Storybook sharing is a very effective way to encourage children to begin to perceive prosodic features in understanding language because the range of language used in storybooks and the range of dramatic expression in story sharing are much greater than in day-to-day conversations. In addition, the pictures in young children’s storybooks contribute to the meaning of the shared story, reinforcing the meanings implied in the oral story. Parents and caregivers often tell of instances in which they did not read a storybook with the same intonation or dramatic speech they used previously, and the child stops them and tells them that they need to read the story the “right way,” meaning that they need to use the anticipated intonation, loudness, tempo, or rhythm.
In learning that oral symbols, or spoken words, have meaning, semantic knowledge is acquired. The development of semantic knowledge is closely tied to the development of conceptual knowledge (Vygotsky, 1962). Semantic knowledge refers to the word labels that specify concepts and also to the semantic networks, or schemata, that represent the interrelations between concepts. Semantic networks—schemata—are thought to be cognitive structures in our memory that organize our conceptual knowledge. These semantic networks facilitate new learning and recall and contribute to the reorganization and elaboration of prior conceptual learning.

For example, the English word ball references the idea of a round object that has certain properties of rolling and bouncing and that is often used in a game or other physical activity. In acquiring concepts, children learn that objects and actions with similar features or functions can be grouped into the same category or into related categories. For example, when a child learns that a small, round, red plastic object is called a ball, he may see similarities when he sees a white soccer ball and also call it a ball, or he may attempt to roll the soccer ball on the floor. A semantic network, or schema, develops when a child begins to see the relations between concepts. Over time, as a child experiences different types of balls that are used for different purposes, a schema develops for balls. See Figure 1.1 for an example of what adults might have in their ball
schema. A young child’s schema for ball will initially be much more limited in complexity and may include only “roundness,” “throwing,” and “bouncing.”

Vocabulary development is closely related to general linguistic competence and to reading comprehension. Children with larger and more developed vocabularies have more options for expressing what they want to say and, thus, have greater linguistic flexibility. One activity that contributes to vocabulary development is storybook sharing, where an adult reads to a child. The vocabulary used in storybooks is often more descriptive and precise than is the vocabulary used in daily conversations. Storybook experiences expand a child’s listening vocabulary. A larger vocabulary also increases a child’s ability to comprehend written text because reading comprehension is directly related to listening comprehension and oral vocabulary. When a specific word (and concept) is part of a child’s oral vocabulary or listening vocabulary, the child can more easily comprehend and decode it when he encounters the word in written text.

Children’s development of semantic knowledge is also influenced by their awareness of the grammatical structure in which language is used. This syntactic knowledge is crucial because the grammatical or syntactic structures carry implied meaning. Word order affects the meaning of what is said.

**Syntactic Knowledge**

To use language effectively, it is necessary to know how to combine words to create meaningful expressions. Each language system has rules or a grammar that prescribes
how words are combined to create sentences or meaningful phrases. This aspect of language knowledge is called **syntactic knowledge**.

Children learn that word order, or **syntax**, is important in creating meaning and in comprehending another’s message. The question “Did you hit Jack?” asks for different information than “Did Jack hit you?” Knowledge of the importance of word order is known linguistically at an unconscious level before children can verbalize their understanding of that language concept. For example, in English, adjectives immediately precede the nouns they modify: “The beautiful flower was on the table,” not “The flower beautiful was on the table.” When children are learning to speak English, their awareness of the position of adjectives relative to the nouns they modify is evident even in their two-word utterances: “big ball,” “blue car.” This occurs long before children can consciously identify adjectives and the words they modify.

Differences between languages may be problematic for second language learners because syntax varies from language to language. For example, in Spanish, some adjectives follow the nouns they modify. A young Spanish bilingual child will have the task of learning two sets of syntactic rules, one for Spanish and one for English.

Children also learn that words cannot be haphazardly combined, as in “flower table the beautiful was the on.” The fact that such random combinations of words have not been documented among young children indicates that word order knowledge develops early. Research has documented few instances of children violating syntactic rules simply because utterances that do not observe the specific language’s syntax are not comprehensible, useful, or meaningful. To speak in a way that violates syntactic rules dooms the speaker to be misunderstood or ignored.

**Morphemic Knowledge**

**Morphemic knowledge** refers to knowledge of word structure. In acquiring syntactic knowledge, children learn that some words have related meanings but are used in different ways in speech and in written language and have different word structure. For example, *happy*, *happiness*, and *happily* have related meanings; however, each word is used in a different way grammatically. *Happy* is an adjective, *happiness* is a noun, and *happily* is an adverb. Thus, each has a different grammatical function. *Walk*, *walking*, and *walked* are related in meaning; however, the location in time or tense is different. In learning how to use words in an appropriate syntactic manner, children also learn that prefixes and word endings change the meaning of a word and its grammatical use.

A word is composed of one or more meaningful linguistic units. The smallest unit of meaning in language is the **morpheme**. There are two types of morphemes: (a) **free morphemes** are used alone as words (e.g., *house*, *turtle*, *book*), and (b) **bound morphemes** must be attached to free morphemes (e.g., the final -s in *houses*, the -ly in *slowly*, and the -ing in *going*).

Bound morphemes are of two types: derivational and inflectional (Lindfors, 1987; Owens, 1988). **Derivational morphemes** include prefixes, such as *un-* in
unhappy, and suffixes, such as -ness in happiness. These morphemes are added to a root or stem to change the meaning of the word or the grammatical function of the word in the sentence. Table 1.1 provides examples of how derivational morphemes change the meaning and grammatical function (part of speech) of a word.

**Inflectional morphemes** are word endings added to change verb tense, possession, or plurality or to make comparisons. For example, many verbs add the -ed morpheme to show past tense, as in walk–walked. To show possession, an apostrophe and the letter s are added to the end of a noun, as in Jack–Jack's hat. Plurality is indicated by adding an -s or -es to a noun, as in cat–cats and dish–dishes. To make comparisons,-er and -est are added, as in fast, faster, and fastest. While many English words are “regular” in the sense that these inflectional morphemes can be used, there are also irregular words that do not follow these patterns. For example, to make a comparison based on the word good, you would say good, better, and best, not good, gooder, goodes. To indicate the past tense of go, you would say went, not goed.

The ability to use morphemes appropriately is one of the characteristics of an effective language user. Knowledge of morphology allows children to comprehend others’ speech better, such as understanding plural nouns and verb tense. Knowledge that cat means one in number and cats refers to more than one cat allows more precise communication.

As children’s speech progresses beyond the one-word and two-word stages, their understanding of how words are formed is used as they attempt to communicate. Many utterances of young children are novel, not simply repetitions of prior adult speech. In the production of an utterance, children use their knowledge of morphemes to create their messages. As children become more aware of how morphemes are used, their language becomes more precise and meaningful.

Young children acquire morphemic knowledge that is present in their linguistic environments. In settings where a particular dialect is spoken, children will first acquire the morphemic knowledge represented in that dialect. In figuring out how language is used and words are structured, children appear to be looking for patterns and hypothesizing. Children’s overgeneralizations of morphological patterns are an example of this.

<table>
<thead>
<tr>
<th>TABLE 1.1</th>
<th>Examples of Derivational Morphemes</th>
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<tbody>
<tr>
<td>Using prefixes and suffixes to change meaning and part of speech</td>
<td></td>
</tr>
<tr>
<td>Prefix</td>
<td>Stem</td>
</tr>
<tr>
<td>un-</td>
<td>accept (verb)</td>
</tr>
<tr>
<td>im-</td>
<td>proper (adjective)</td>
</tr>
<tr>
<td>dis-</td>
<td>grace (noun)</td>
</tr>
</tbody>
</table>
Children’s **overgeneralizations** occur when they assume that a particular word follows a regular pattern when, in fact, it follows an irregular pattern. For example, the past tense of regular verbs is created by adding *-ed* to the present tense. Children who assume that *come* is a regular verb will create the past-tense form by adding *-ed*, resulting in “comed.”

Similarly, when children begin to learn comparative forms of adjectives, they may see the pattern of regular comparative forms, which are made with *-er* (happi*er*) and *-est* (happi*est*) endings. However, some children apply this rule to all adjectives, as in *fun, funner, funnest,* or even *best, bester, bestest*. Overgeneralization decreases as language development proceeds and as children have opportunities to interact with adults and older siblings who have acquired more complete morphemic knowledge.

Overgeneralization can also occur in the use of prefixes. For example, children learn that the way to change a word to mean the opposite is to add the prefix *un-*, meaning “not.” They understand that *unhappy* means “not happy.” Children may create their own words based on their understanding of how prefixes (or suffixes or plural endings) work. To illustrate, a 5-year-old girl was being chided by her mother because a doting aunt had given her another doll during a recent visit to the aunt’s home. When her mother asked her why she accepted another doll that she really did not need, the girl replied, “Mommy, Aunty insisted, and I couldn’t un-sist!”

**Pragmatic Knowledge**

Language use is embedded in social–cultural contexts. Different contexts are characterized by differences in the way language is used. Through our social–cultural interactions, we learn when to speak; when not to speak; what to talk about with whom; and when, where, and in what manner to speak (Gleason, 1993). We also learn the specific style of speaking for certain contexts with respect to the expected phonological, semantic, syntactic, and morphemic features. This knowledge or awareness of how to use language differently in different settings and situations represents pragmatic knowledge. This knowledge contributes to appropriate and effective communication (Ninio & Snow, 1999).

**Pragmatic knowledge** involves the knowledge or awareness of the overall intent of the communication and how language is used to achieve that intent. Pragmatic knowledge encompasses the intent of the speaker, the specific form of the utterance, and the anticipated effect the utterance will have on the listener. The selection of intent or purpose in communication and the way in which language is used contribute to a child’s level of communicative competence in early childhood and beyond. Early on in the development of communicative competence, children’s efforts appear to have purpose or intent. An 8-month-old child who looks at her mother with outstretched arms and produces strained vocalizations (/uh/ /uh/) is assumed to be communicating that she wants to be picked up. If not initially successful, the child may repeat her request, vocalize louder, or gesture more emphatically (Gleason, 1993).
Pragmatic knowledge also contributes to our awareness of how to converse with others, how to participate verbally in various settings, and how to produce connected discourse, such as narratives (Ninio & Snow, 1999). Conversational skills are a critical part of pragmatic knowledge because they affect a child’s ability to engage in classroom and social interactions (Ninio & Snow, 1999; Weiss, 2004). Conversational competence depends on the development of specific skills of taking turns, keeping similar or related topics as the focus of the conversation, encouraging participation from the other person(s), and clarifying or repairing areas of confusion. Through children’s direct experiences, they become aware of the rules or expected ways in which conversations are initiated, maintained, and discontinued. In a conversation, both people take on the alternating roles of speaker and listener (Clay, 1998). Children who cannot differentiate how to use language in different settings may be “excluded from social interactions with peers or may be unable to request assistance from teachers during classroom activities” (Weiss, 2004, p. 35).

The term **register** refers to the specific ways of using language differently in different settings. For example, face-to-face conversations, classroom discourse, telephone conversations, ritual insults, service encounters, jokes, and doctor–patient
talk. Children learn to distinguish different times when quiet voices and loud voices are used, and they pick up social conventions such as saying “please” and “thank you.” Children learn how to talk most effectively to adults and to each other by using different interaction styles. For example, a mother of a 5-year-old might discover that the verbal whining she often heard at home from her child never occurred when the child was at school.

Children also acquire knowledge of how language is used in relation to one’s gender, or *genderlect* (Kramer, 1974, cited in Warren & McCloskey, 1997; Sheldon, 1993; Tannen, 1990). For example, research has indicated that preschool and kindergarten boys and girls tend to talk about different topics (Haas, 1979, cited in Owens, 2001), with boys talking more about sports and girls talking more about school.

Children also acquire pragmatic knowledge of how language is used to tell story narratives and communicate information through their early experiences with storybooks.
with storybooks and information books. Children who have had frequent storybook interactions with a wide variety of types of texts (or genres) will develop an awareness of how language is used in each type of discourse (Otto, 1987). For example, when encouraged to create a fairy tale, preschool children may begin the story with “once upon a time” and conclude their stories with “they lived happily ever after” or “the end.”

**Relation of Aspects of Language Knowledge to Communication**

Development of each of the five aspects of language knowledge is critical to effective communication. Each aspect does not develop in isolation from the other aspects; instead, the aspects are interrelated. For example, phonological knowledge can influence the development of semantic knowledge because perception of sound differences is needed to distinguish between similar words, such as *cat* and *cot*. Syntactic knowledge also influences semantic knowledge because word order implies meaning through grammatical structure. For example, in “The XXX went on a train ride,” XXX must be a person or thing capable of being on a train. Morphemic knowledge also influences semantic knowledge because some bound morphemes accompany changes in word meaning (e.g., *happy* vs. *unhappy*). Morphemic knowledge is also related to syntactic knowledge as some bound morphemes change the grammatical function of a word (e.g., *happy* vs. *happiness*). Pragmatic knowledge is influenced by each of the other four aspects because how language is used in different settings is reflected by differences in phonological, semantic, syntactic, and morphemic features.

The complex interrelations of these five aspects of language knowledge to a child’s use of language and communication are illustrated in Figure 1.2. The amount of interaction between the five aspects varies with the language or dialect used; however, it is important to remember that no single aspect of language knowledge exists or is acquired in isolation from the other aspects. Each of these five aspects contributes to children’s developing competencies in using language. This dynamic interaction is illustrated in Figure 1.3.

**FIGURE 1.2**

*Interrelations Between the Five Aspects of Language Knowledge*

![Diagram showing interrelations between five aspects of language knowledge: Morphemic Knowledge, Pragmatic Knowledge, Syntactic Knowledge, Phonological Knowledge, Semantic Knowledge.](image)
Chapter 1

LEVELS OF LANGUAGE KNOWLEDGE

A child’s knowledge of language develops at different levels of conscious awareness (Otto, 1982). Children first develop knowledge of language at a linguistic level, or usage level. This is the “know-how” of being able to use language in communicative contexts. This linguistic level of language knowledge can be documented in children’s development of each of the five aspects of language knowledge. Children’s ability to articulate and discriminate different sounds and words when using language to communicate represents their linguistic level of phonological knowledge. Similarly, children’s ability to comprehend the semantic meanings of others’ speech and to create their own meaningful speech represents their linguistic level of semantic knowledge. The linguistic level of syntactic knowledge is evident as children are able to express their ideas in a form that is grammatically appropriate to their dialect or language. Morphemic knowledge at the linguistic level is evident when a child can use appropriate plural forms of nouns or use prefixes and suffixes. The linguistic level of pragmatic knowledge is demonstrated by a child’s use of “please” and “thank you” in social situations.

Gradually, children become more aware of the five aspects of language knowledge and can consciously manipulate and reflect on features of language. This conscious awareness of specific features within the aspects of language knowledge is at a level higher than linguistic knowledge, the metalinguistic level. At the metalinguistic level, a
child consciously manipulates phonological, semantic, syntactic, morphemic, and pragmatic knowledge to form the desired message. Metalinguistic knowledge is indicated when a child can respond to questions about words and other linguistic concepts, such as sounds, consonants, vowels, and word parts. Children’s wordplay in rhyming games is an indicator of their early metalinguistic phonological knowledge. Other evidence of early metalinguistic knowledge has been described by emergent literacy research (Ehri, 1975; Schickedanz, 1981; Sulzby, 1986b; Voss, 1988) that has documented children’s spontaneous comments about language, such as “My name starts with a T—Tommy!”

Metalinguistic knowledge acquired through informal interactions with oral and written language develops further when children enter formal schooling. Beginning in kindergarten, many learning activities focus on the conscious manipulation of specific features or concepts of both oral and written language. For example, when a child is asked to give the first sound in the word *bat*, she must not only know how to say the word (linguistic knowledge) but must be able to use her concepts of “sound” and “first” in reflecting on the word and then separating out the sounds.

When children begin to verbalize their metalinguistic knowledge, they are at the most conscious and complex level of language knowledge, **metalinguistic verbalization**. For example, when children are asked to explain how the words *cup* and *pup* sound alike, they must be able to verbalize their awareness of the rhyming that is present. This requires talking about their knowledge of a specific feature of language. Children acquire linguistic knowledge and metalinguistic knowledge as they use language and through interaction with others. Only after oral language is well established can children begin to verbalize their metalinguistic knowledge.

A teacher’s awareness of levels of language knowledge is important in determining the developmental appropriateness of language-related tasks in early childhood classrooms. Teachers of young children need to structure their learning activities to involve both linguistic and metalinguistic knowledge; however, it is not appropriate to expect that young children will be able to verbalize their metalinguistic knowledge. For example, first-graders may learn to decode words that contain digraphs and blends, but will not be able to explain the difference between a digraph and a blend.

A summary of the three levels of language knowledge is presented in Table 1.2. Linguistic knowledge provides the foundation for higher levels of language knowledge. Likewise, the middle level, use of metalinguistic knowledge, provides the basis for the development of the highest level, the ability to verbalize metalinguistic knowledge. For example, children’s phonological knowledge during infancy and toddlerhood is at the linguistic level of language knowledge. They are able to produce and distinguish between the sounds used in their home languages. As children move into the preschool years, they may acquire a more conscious awareness of distinct sounds in their language and begin to manipulate their language through this conscious awareness known as phonological awareness. Phonological awareness serves as a basis for children to acquire knowledge of **phonics**, which involves learning how alphabetic symbols, letters are used to represent the specific sounds in words used in written language (Eldredge, 2004). This is demonstrated when a second-grade child describes why the initial sounds in *phone* and *paper* are different, even though both words start with the letter *p*. Figure 1.4 illustrates the
TABLE 1.2
Levels of Language Knowledge

<table>
<thead>
<tr>
<th>Level</th>
<th>Definition</th>
<th>Typical Age of First Evidence</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Linguistic Knowledge</td>
<td>Knowledge of how to use language to communicate</td>
<td>Toddlers and preschoolers</td>
<td>Beginning to use language effectively to communicate needs and intents</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Begins to focus on and manipulate specific sounds in rhyming games or to notice how alphabet letters represent sounds; “Oh, there’s a J. That’s my name, Jon.”</td>
</tr>
<tr>
<td>II. Metalinguistic Knowledge</td>
<td>Conscious awareness of specific features of language</td>
<td>Preschool and kindergarten</td>
<td>Can explain how <em>cup</em> and <em>pup</em> sound alike</td>
</tr>
<tr>
<td>III. Verbalization of Metalinguistic Knowledge</td>
<td>Can verbally respond to questions about specific language features</td>
<td>Late kindergarten and primary</td>
<td></td>
</tr>
</tbody>
</table>

FIGURE 1.4
Developmental Progression of Three Levels of Language Knowledge
developmental progression of the three levels of language knowledge, beginning with linguistic knowledge as a basis, and continuing on to metalinguistic knowledge, and then to verbalization of metalinguistic knowledge.

ORAL AND WRITTEN LANGUAGE MODES

To become an effective communicator in a literate culture, a child must acquire competencies in using both oral language and written language. Oral language and written language both have receptive and expressive modes. Listening and reading are receptive in nature—receiving and comprehending a message created by another orally (i.e., listening) or in written language (i.e., reading). On the other hand, speaking and writing are expressive in nature. In early childhood and elementary curricula, significant emphasis is placed on providing learning activities that focus on developing children’s competencies in these four areas. Table 1.3 provides an overview of these modes and forms of language competencies.

Oral language provides the basis on which knowledge of written language is acquired. As children interact in environments where written language is used to communicate, they acquire knowledge and awareness of how written language is similar to and different from oral language. Written language is not just oral language written down (Purcell-Gates, 1989). Written language uses different vocabulary and a more complex word order or syntax (Chafe, 1982; Purcell-Gates, 1989; Tannen, 1982). In addition, written language must convey meaning through the printed message because it carries the meaning without gesture, facial expression, or immediate contextual situations. For example, when you tell a story orally, you can use gestures, posture, facial expressions, and variations in your intonation to fully communicate your story. For a more formal storytelling event, you might even dress in costume or have story props or puppets. In contrast, a written story relies on only the printed word to communicate the meaning—by the words used, their meaning, the grammatical and morphemic structures, and the pragmatic expectations for a particular genre of story—all of which are communicated through written language.

Awareness and knowledge of the specific ways in which written language works is acquired in each of the five aspects of language: phonological, semantic, syntactic, morphemic, and pragmatic. To be effective communicators, children need to acquire linguistic knowledge in each of the five aspects of language in both oral and written forms of language. Oral language is acquired prior to written language.
knowledge; however, as written language knowledge is acquired, oral language continues to develop further; it is refined and elaborated with experiences that involve written language. A summary of the differences between oral language and written language in each of the five aspects of language knowledge is presented in Table 1.4.

CRITICAL ROLE OF CHILDREN’S ORAL LANGUAGE COMPETENCIES

In our classrooms, children who are fluent in oral language are more successful learners than those who are not (Fey, Catts, & Larrivee, 1995). As they learn to read and write, children use their oral language knowledge as a basis for this new knowledge of the written language system when they begin to focus on the features and concepts of written language. Children who are fluent in oral language can communicate their ideas and ask questions during learning activities. In addition, children’s oral language competencies influence their development of literacy because reading and writing both involve processing and manipulating language. The basic
oral language abilities that are related to subsequent literacy development include vocabulary, syntactic production and comprehension, phonological awareness, and narrative production and awareness (Loban, 1976; Wells, 1986; Windsor, 1995).

Children’s oral language competencies develop in both receptive and expressive modes. Listening is a critical receptive language skill because listening is necessary to “receive language.” Listening is not a passive activity. Instead, to be effective, listening must be active and purposeful. At school, children spend much of their time listening to their teachers or to their classmates. Their ability to listen and understand their teacher’s directions and instruction and the contributions by their classmates influences what and how much is learned; however, explicit attention to developing listening competencies may be absent in many classrooms (Wolvin & Coakley, 1985).

The ways in which children use language to serve different purposes or functions have also been found to predict later language skills. In a longitudinal study, Wells (1986) identified two oral language characteristics that were effective in predicting children’s subsequent overall achievement. For 2-year-olds, the use of a range of functions for speech was identified as a predictor of later achievement. For 3½-year-olds, the effective predictor of later achievement was the children’s competent use of a range of different sentence types.

Another aspect of school success related to oral language competencies is a child’s social-interaction skills (Windsor, 1995). Children who have oral language competencies will be more successful in communicating with both teachers and peers. Their success in carrying on conversations and in responding in learning activities will contribute to further success at school. Children who have difficulty communicating may be ignored by peers or excluded from informal social or collaborative interactions. The inability to participate successfully in a conversation or the inability to clearly articulate the sounds in words may decrease the likelihood that other children will attempt to speak or play with them.

In the section that follows, several research studies will be highlighted to illustrate the importance of oral language development to written language development and the complex ways the two forms of language are interrelated.

Insights from Research on Oral and Written Language

A longitudinal study of oral language development. In an extensive, longitudinal, descriptive study of language development, Loban (1976) followed 211 children from kindergarten through 12th grade. Each year, every child was studied with respect to reading, writing, listening, and other language-related behaviors. After the initial data collection, three subgroups were formed: a high-language-ability group, a low-language-ability group, and a random group representing the total group. Due to the prohibitive constraints on time and money in analyzing this large data collection for the detailed analysis, Loban selected a random subsample of each of the ability groups, along with the initial random (representative) subgroup. Loban’s analysis of this random subsample concluded that the children identified as having high language ability in kindergarten were those who consistently exhibited higher
language competencies throughout the 13 years. These specific language behaviors included:

- greater ability and flexibility in the ways in which they expressed their ideas and engaged in conversation
- higher reading and writing competencies
- more extensive vocabularies
- more complex sentences, paragraphs, or both
- more effective listening competencies

Loban’s study is significant for the depth of data collected and for the length of time studied. His research documented the importance of oral language ability in kindergarten as a precursor to later competencies in areas of oral and written language with respect to semantic, syntactic, and pragmatic knowledge.

Loban’s landmark study was followed by continued exploration of the role of oral language development in children’s development of written language and general school performance (Bowey & Patel, 1988; Clay, 1991; Crane-Thoreson & Dale, 1992; Dyson, 1981; Egan, 1996; Fey, Catts, & Larrivee, 1995; Scarborough, 1990; Snow & Ninio, 1986; Sulzby, 1986b).

Additional evidence of the significant role of oral language in the development of literacy comes from the field of emergent literacy research. Since the early 1980s,
researchers have focused on the gradual emergence of literacy-related behaviors and competencies. This emergent literacy perspective examines how children acquire knowledge of reading and writing in their daily, informal encounters with written language.

**A study of children's early writing.** Dyson (1981) closely observed kindergarten children as they interacted in a writing center she had introduced to the classroom. Dyson documented the following ways in which oral language played a significant role in children’s early writing:

- Children were observed using talk as they started to write, while they were in the process of writing, and then as a way of explaining or expanding on what they had written.
- Oral language was also used to solicit help from a nearby adult.
- During the process of creating their written messages, children also reread frequently as a way of monitoring what they had written and what part of their message they had yet to put on paper.

In Dyson’s study, children used oral language (talk) to guide and facilitate the creation of their written stories. They used oral language as a tool in conjunction with written language to create stories. In addition to using oral language in the process of producing written language, young children are also developing their ability to use language differently in different settings.

**Research on children’s use of language in literacy-related settings.** Sulzby’s research (1986b) explored children’s use of language in interview settings, story dictation, storytelling, and rereading of their own handwritten compositions. Her research documented the ways children use language differently in those varied settings. She also reported that children appear to be exploring the ways oral language and written language differ. Sulzby noted that some children put written features into their speech, inserted oral language features into their written language, or both. Sulzby (1991a) concluded that young children acquire written language alongside oral language and further stated that oral and written language are interrelated and intertwined in dynamic ways during the developmental process.

**A study of children’s oral and written narratives.** Research by Purcell-Gates (1989) documented children’s use of different registers. She concluded that children use language differently in oral narrative than they do in written narrative. Children demonstrated that they “implicitly understood that written narrative is more integrative, involving, literary (stylistically) and decontextualized than oral narrative” (p. 291). Purcell-Gates concluded that children know that the vocabulary and sentence structure of books have a different quality than oral speech. She also noted that children continue to use this knowledge as they become involved in reading and writing.

**A longitudinal study of low-income children.** Snow, Tabors, and Dickinson (2001) studied low-income, English-speaking children from preschool age through
high school in their “School–Home Study of Language and Literacy Development.” They concluded that children’s receptive vocabulary knowledge in kindergarten was strongly correlated to the children’s scores both 5 and 8 years later on specific literacy skills in the areas of receptive vocabulary and reading comprehension. These researchers cautioned that this relation did not predict student achievement without exception. Rather, how children scored in kindergarten indicated how they might score in elementary school and junior high. Other factors that occurred during those years, such as literacy-related experiences at home and at school, appeared to influence how the children actually scored in later years (Tabors, Snow, & Dickinson, 2001).

**Research implications.** In addition to documenting the importance of oral language development in children, these key research studies have further contributed to our understanding that young children are actively acquiring written language knowledge as their oral language knowledge continues to develop during their early childhood years. Throughout this text, additional research is presented to illustrate the ways in which language develops throughout the early childhood years.

**SUMMARY**

Children’s development of language has been a source of fascination for centuries. Gradually, and without formal instruction, children learn how to communicate. They learn how to express meaning through the use of spoken symbols and through using those symbols (words) in a systematic or structured way.

Language is acquired through knowledge and awareness of the phonological, semantic, syntactic, morphemic, and pragmatic aspects of both oral and written language. Children who are in environments where oral language and written language are used in meaningful ways will gradually acquire competencies in using language to communicate and to solve problems. Knowledge and awareness of each aspect of language knowledge contribute to a child’s effectiveness in communicating in both home and school settings. This knowledge and awareness also forms the basis for continued language and literacy development. The development of each of these five aspects of language awareness and knowledge will be explored in future chapters in this text.

**CHAPTER REVIEW**

1. Key terms to review:
   - receptive language
   - expressive language
   - phonological knowledge
   - phoneme
   - phonological awareness
   - prosodic features
   - semantic knowledge
   - schemata
   - syntactic knowledge
   - syntax
2. In what ways is language essential to all societies and cultures?
3. How do prosodic features in speech contribute to both phonological and semantic knowledge?
4. When a young child overgeneralizes, what could this tell you about his morphemic knowledge?
5. How are oral language competencies related to the development of literacy? Give examples to support your answer.

*** CHAPTER EXTENSION ACTIVITIES ***

Observation

1. Observe a group story time in a preschool or kindergarten classroom. Identify examples from the interaction that involve one or more of the five aspects of language knowledge.
2. Observe a kindergarten classroom and describe how the language arts (speaking, listening, reading, and writing) are encouraged by the curricular activities and by the learning resources in the classroom.
3. Observe a first-grade reading lesson. Identify the level(s) of language knowledge encouraged by the reading lesson. Give examples to support your conclusions.

For Research

Using the Internet, locate a professional journal article on preschool, kindergarten, or elementary-aged children on one of the following topics: phonemic awareness, metalinguistic knowledge, and speech and gender roles. Write a summary of the main points of the article. Indicate how the article relates to specific concepts presented in this chapter. Include a copy of the article with your paper.
Chapter 2

Theoretical Perspectives and Contexts of Language Development

Learning Outcomes
After reading this chapter you should be able to
• Describe four theoretical perspectives of language development
• Explain the brain’s role in language development
• Identify and define the seven patterns of interaction
• Explain the role of home environments on language development

The children in Mrs. Frank’s classroom provide dramatic evidence of their developing language competencies. The process of language development has intrigued researchers, educators, and parents for decades. How do children learn to talk? How do they learn to participate in conversations? In response to these questions, scholars and researchers have developed theories or sets of interrelated and coherent ideas that explain and make predictions about language development (Santrock, 2001).
Learning to Communicate: Theoretical Perspectives

During the past 50 years, many linguists and developmental psychologists have studied language development with respect to what is learned, when it is learned, and what variables or factors seem to explain the process of development. These scholars and researchers have documented the amazing complexity of language and the remarkable ability of young children to develop language competencies, regardless of the culture in which they live and the language used at home.

In the field of child study, there has been a long-standing debate about the roles of nature and nurture in influencing an individual’s development (Karmiloff & Karmiloff-Smith, 2001; Santrock, 2001). This debate has also been evident in the development of theoretical perspectives on language development. Is a child a “blank slate” at birth, and do the experiences or “nurture” provided in the environment predominantly determine language development? Or is the child already “preprogrammed” for language development in such a way that heredity and maturation are the major influences, with experience and context exerting only limited influence? Several different perspectives have been proposed as theoretical bases for more fully understanding language development. These perspectives have varied in the ways they believe nature and nurture influence language development.

In the first part of this chapter, four theoretical perspectives will be described: nativist, cognitive developmental, behaviorist, and interactionist. While no one theory provides a complete and irrefutable explanation of language development, each theory contributes significant ideas and concepts, which over time have clarified our awareness of the ways language develops. A comprehensive theory of language development would need to consider linguistic complexities and address each of the five aspects of language knowledge. Because the study of languages has occurred concurrently with the emergence of specific theories of language development, earlier theoretical perspectives may not incorporate more recently described linguistic concepts.

While each of the perspectives focuses on the roles of nature and nurture as well as the development of specific language knowledge, there is considerable variation between the theories. The nativist and the cognitive developmentalist perspectives emphasize the contributions of “nature,” whereas the behaviorist and interactionist perspectives focus more on the contributions of “nurture.” By understanding the contributions of each theory, teachers will better understand the process of language development and will be better able to facilitate language development in their classrooms. (See the summary chart in Table 2.1.)

The discussion of theoretical perspectives is followed by a section on the relation between brain development and language development. In each theoretical perspective, the human brain has a significant role because it is through the brain that stimuli or phenomena are experienced and responses are formed and expressed. The final section of this chapter focuses on the ways in which the contexts of home and school nurture language development and describes specific patterns of interaction that enhance the development of language competencies.
The nativist perspective emphasizes inborn or innate human capabilities (i.e., "nature") as being responsible for language development. Linguist Noam Chomsky and Steven Pinker are the major theorists associated with the nativist perspective.

Chomsky’s contributions to our understanding of the acquisition and structure of language have been significant (1965, 1975, 2002; Pinker, 1994). Chomsky contends that all people inherently have the capacity to acquire language due to cognitive structures that process language differently from other stimuli.

A major focus of Chomsky’s work has involved identifying grammatical aspects of language and describing the rule systems for using language. Chomsky has defined this rule system, or universal grammar, as “the system of principles, conditions, and rules that are elements or properties of all human languages” (1975, p. 29). Semantic knowledge is also considered with respect to its relation to syntax. An example of how different languages structure the same message is shown in Figure 2.1.

Chomsky proposes that this universal grammar is an innate property of the human mind. This component explains the ability of all humans to learn their culture’s specific language. The ability to learn language is a quality of the human species because humans obviously are not designed to acquire one language over another. Healthy infants are able “to learn any of the world’s 3,000 languages” (Rushton, Eitelgeorge, & Zickafoose, 2003, p. 13). Chomsky’s description of the high level of grammatical complexity acquired by young children has contributed to our understanding of the significance of language development among people of diverse language environments.

How, then do children learn a language? Chomsky’s description of this process involves an inborn, language-specific mechanism called a language acquisition device (LAD) (Chomsky, 1982; Harris, 1992). The LAD enables children to process and acquire language through innate knowledge of grammatical classes, underlying deep structure, and ways in which language can be manipulated.
Building on Chomsky’s work, Steven Pinker (1994) contended that language is an instinct, not simply a cultural invention: “Language is a biological adaptation to communicate information . . . language is the product of a well-engineered biological instinct” (p. 19). As evidence of the universality and instinctive nature of language, Pinker noted that throughout history, all civilizations, even among primitive societies, have a language. While languages may differ dramatically with respect to linguistic features, the development and use of language in all cultures is universal. Because language exists in every culture, Pinker concluded that it must come from human biological instinct rather than from the existence of the culture. Children are not taught language; rather, “children actually reinvent it, generation after generation” (Pinker, 1994, p. 32). Children are active participants in their language development. In a sense, children teach themselves language. Through the acquisition process, children construct their knowledge of the ways language is used and manipulated. This process is sometimes referred to as hypothesis testing. Children test their hypotheses or sets of assumptions of how language is spoken, articulated, used, and manipulated.

In summary, the nativist perspective describes language development as an innate, instinctual process where children develop language by discovering the structure of their language (Cairns, 1996). This discovery process is thought to be aided by an inborn mechanism that is specific for language learning.

Implications of the nativist perspective for early childhood classrooms. The nativist perspective encourages teachers to use a curriculum that will provide...
extensive opportunities for children to explore language and engage in hypothesis testing of their developing knowledge of language. By having opportunities to use and explore language in both its oral and written forms, a child’s LAD is activated, resulting in his discovery of the structure of his language (syntactic and morphemic knowledge). For example, a wide range of children’s literature should be read to children so that they can develop and test hypotheses about how language is used to communicate. Opportunities to draw and write encourage children to communicate and create meaning based on their ideas of how language works.

Cognitive Developmental Perspective

The cognitive developmental perspective is based on the work of Jean Piaget (1955). The emphasis of this perspective is that language is acquired as maturation occurs and cognitive competencies develop. Whereas the nativist perspective emphasizes the inborn language mechanism, the cognitive developmental perspective assumes that cognitive development is a “prerequisite and foundation for language learning” (Karmiloff & Karmiloff-Smith, 2001, p. 5). This perspective also proposes that a child learns language by using the same mechanisms as for other learning. Thus, there is no unique language mechanism. The close relation between cognitive development and language is based on the belief that, for language to develop, specific cognitive growth must occur first.

In the first stage of cognitive development, the sensorimotor stage, children are prelinguistic. According to Piaget, children’s understanding of the environment comes only through their immediate direct (sensory) experiences and their motor (movement) activities. An important precursor to the onset of language is the development of object permanence. Object permanence involves an awareness that an object continues to exist even when it is out of sight. Further, when the object reappears, it is the same object and has the same properties as before. It is through sensorimotor experiences in infancy that children develop the cognitive ability to understand object permanence. According to Piaget, language appears when children’s cognitive growth reaches a point where they use and manipulate symbols (Piaget, 1962, in Paciorek & Munro, 1999). After object permanence is acquired, children begin to use symbols such as words to refer to objects and actions (Santrock, 2001; Sinclair-deZwart, 1969).

Piaget’s definition of language is narrower than that of other psychologists or linguists. For “language” to exist, Piaget contended, the “capacity for mental representation must be present” (Brainerd, 1978, p. 110). Thus, vocalizations and babbling that occur during infancy are not language, according to Piaget. The development of symbolic representation changes a child’s thinking because it is now possible to “invoke objects which are not present perceptually . . . reconstruct the past . . . or make plans for the future” (Piaget, 1961, in Paciorek & Munro, 1999, p. 7).

Symbolic representation is evident when a child uses signs and symbols in response to a new situation, whereas earlier the child would have used trial and
error to deal with the situation (Atkinson, 1983). For example, if a child is presented with a new box to open that differs slightly from previous boxes with which the child has played, symbolic representation is evident when instead of simply using trial and error to find a way to open the box, the child appears to use her prior experiences in a symbolic way in “thinking out” a solution to the task before manipulating the box.

At about the age of 1 year, some children begin to represent actions and objects mentally and symbolically. During this time, relations between actions and objects develop and are organized into abstract cognitive structures called schemata (Brainerd, 1978). One of the distinguishing features of concepts and schemata is that they reflect experience broader than that of the individual person. This means that concepts and schemata develop from interpersonal interaction and communication. This communication relies on “signs” (Piaget, 1962). Piaget contended that the development of verbal signs or words facilitates cognitive development because it makes possible “the transformation of sensory motor schemas into concepts” (1962, p. 99).

According to Piaget, the second stage of cognitive development is the preoperational stage. This stage begins at about 2 years of age and extends to about 7 years of age. Children in this stage “begin to represent the world with words, images, and drawings” (Santrock, 2001, p. 36). Piaget (1955) considered children’s initial speech to be egocentric, focused on their own perceptions, which may reflect distorted perceptions or relations. Gradually, as children develop cognitively, their speech becomes socialized, or reflective of more logical thinking.

Because the cognitive developmentalist perspective focuses on the development of schemata and the manipulation of symbols, it contributes to our understanding of how semantic, syntactic, and morphemic knowledge are acquired.

Implications of the cognitive developmental perspective for early childhood classrooms. The cognitive developmental perspective encourages teachers to pay close attention to a child’s stage of cognitive development and use that knowledge to appropriately plan learning activities. For example, teachers would implement a curriculum that recognizes the importance of the development of specific cognitive mechanisms as precursors to the onset of language, such as object permanence and symbolic representation. Curricula in infant and toddler centers would have many varied opportunities for very young children to engage in sensorimotor activities. Many opportunities to engage in symbol making and symbol manipulation would also be provided, so children would have activities that encourage them to represent their world using oral and written symbols through speaking, drawing, and writing.

Behaviorist Perspective

The behaviorist perspective emphasizes the role of “nurture” and considers learning to occur based on the stimuli, responses, and reinforcements that occur in the
environment. A child is considered to be a “blank slate” (Karmiloff & Karmiloff-Smith, 2001), and learning occurs due to associations established between stimuli, responses, and events that occur after the response behavior. Language is learned as a result of these associations. Reinforcement of a child’s verbal and nonverbal responses to language directed at him is responsible for the language learning that occurs. Thus, language is “taught” through situations in which children are encouraged to imitate others’ speech and to develop associations between verbal stimuli (i.e., words) and objects (Harris, 1992). Complex speech, such as phrases and sentences produced by a child, is considered evidence that a chain of speech units has been reinforced (Cairns, 1996). Reinforcement often takes the form of attention, repetition, and approval (Puckett & Black, 2001). This type of conditioning (or learning) is called operant conditioning (Skinner, 1957).

The use of the word operant acknowledges the child’s active role in the learning process. This type of learning occurs when environmental consequences occur that are contingent on the specific behavior. When a certain behavior is followed by a particular result, that consequence influences whether the behavior will be repeated. This perspective has been used to explain productive speech (Bohannon & Bonvillian, 1997).

For example, when an infant is making sounds while in the presence of a parent and says “ma-ma,” the parent may rush to the infant, show signs of delight, and say, “Oh, you said ‘ma-ma’!” This positive response from the parent increases the chances that the infant will repeat those sounds. Likewise, speech that elicits no response or is ignored is less likely to be repeated.

Operant conditioning also explains the process of imitation because children’s attempts at imitating adult speech are often followed by reinforcement from the communicative environment in which the child is interacting. Imitative speech involves the production of speech that approximates the speech of another person. Imitation may occur as a result of direct modeling, such as when an adult tells a child, “Now say ‘bye-bye’,” and the child responds with an immediate attempt to repeat the specific word(s). Or, it may occur as a result of delayed modeling, when the child approximates previously modeled speech in a similar setting without being prompted. In other instances, imitative speech may occur without the models’ awareness that their speech was being learned. A child who hears his parent utter an expletive on accidentally hitting a finger with a hammer or spilling a cup of tea may surprise his parent by using the same word (and intonation) in a similar situation in the child’s dramatic play.

Many types of environmental responses serve as reinforcers. Positive reinforcement may come from the excited response of parents to their child’s verbal attempts. It may also come from the success of communication to express a want or need. A child who is thirsty and can say “drink” in a way that results in being given a drink is positively reinforced for that attempt. When adults are teaching a child to say “bye-bye,” the child’s attempts are often followed by positive reinforcement such as a hug, an embrace, or verbal praise.
While the behaviorist perspective does explain how some words and phrases are learned, it does not provide a complete explanation for the development of other language competencies. Specifically, the behaviorist perspective does not explain how children learn to express novel utterances (Harris, 1992), such as their own invented words or phrases that have not been used by the other speakers in their environment.

Using the contributions of behaviorism as a basis, researchers are no longer simply focusing on identifying the stimuli, responses, and reinforcing contingencies that occur in linguistic interactions. Instead, researchers are exploring the dynamic processes that occur in various contexts that support language development where children are actively involved in constructing their knowledge of language. Recent research that has explored the context of young children’s language development has identified specific ways in which different contexts and the people in those contexts interact with children who are acquiring language and learning to communicate. This research will be further described in the subsequent section on the interactionist perspective.

Implications of the behaviorist perspective for early childhood classrooms. Teachers who follow a behaviorist perspective would focus on the stimuli and reinforcements that children experience in regard to language use. Activities would be provided that encourage children to communicate verbally through imitation and repetition. Positive reinforcements using attention and approval would be given to encourage children to interact using language. When teaching finger plays and action songs, the focus would be on using repetition, imitation, and positive reinforcement. A teacher’s enthusiasm and praise for children’s efforts in learning the finger play or action songs would provide further reinforcement.

Interactionist Perspective

The interactionist perspective focuses on the primary role of sociocultural interaction in children’s development of language knowledge (Bruner, 1983, 1990; John-Steiner, Panofsky, & Smith, 1994; Schieffelin & Ochs, 1986; Vygotsky, 1978; Wertsch, 1991). This perspective contends that children acquire language through their attempts to communicate with the world around them. This perspective contributes to our understanding of the ways in which children acquire pragmatic language knowledge.

Language is acquired by individuals as they develop awareness of how to communicate and function in society (Halliday, 2007; Tomasello, 2000). The early work of Vygotsky emphasized the role of social interaction in language development (1962, 1978; John-Steiner et al., 1994). Vygotsky’s basic premise was that language development is influenced by the society in which the individual lives: “higher mental functions are socially formed and culturally transmitted” (Vygotsky, 1978, p. 126). Speech has social origins. It develops in situations where people are interacting with each other in a communicative context. Tomasello (2000) emphasizes
the role of joint attention (i.e., shared reference) as a key part of language development. As joint attention occurs, children learn they can engage others in communicating about ongoing events or entities in their environment.

Another aspect of the interactionist perspective is its focus on the language development process rather than on language as a product of development. In this way, the interactionist approach builds on each of the three prior perspectives of language development. Specifically, it acknowledges behaviorism’s recognition of the environment’s responses to young children’s communicative attempts, nativism’s recognition of the human capacity for processing linguistic information, and the cognitive developmentalist’s contention that language development is influenced by the nature and sequence of cognitive development.

Extensive research conducted by Bloom and Tinker (2001) has further added to this emphasis on language development and social interaction. In their study of young children between the ages of 9 months and 2 years, Bloom and Tinker found that children expended considerable effort in acquiring language. In recognizing the role of a child as an active learner of language, Bloom and Tinker proposed the Intentionality Model of language development, which has two components:
(a) children’s active engagement with others as well as other aspects of their environment that provide motivation to develop language competencies and (b) the effort of the language learner in making sense of the “linguistic, emotional, and physical actions” present their environment (p. vii). This challenges earlier assumptions that language development is “natural” and does not require conscious effort. Instead, Bloom and Tinker describe the way in which very young children intentionally expend effort in associating speech sounds with meaning and then begin to use words and phrases. This intentionality for acquiring language also continues well beyond the toddler years as children develop more elaborate language competencies.

The primary role of social interaction in language development is based on the observation that children acquire an awareness of specific communicative functions or intentions (such as indicating, requesting, and labeling) before they are able to express themselves linguistically (Bruner, 1990). This can be seen in the joint attention and verbal turn taking that often occurs between prelinguistic infants and their parents and caregivers. These early understandings of how language functions then provide a foundation on which the linguistic competencies are acquired. The ways in which an environment supports children’s language explorations have been referred to as the language acquisition support system (LASS) (Bruner, 1983). Environmental supports for language development are present in the interaction patterns found in conversations, such as listening, responding to what has been said, repeating for clarification, and asking questions.

Role of the adult in the interactionist perspective. In the interactionist perspective, the role of adults in the communication process is crucial in supporting children’s language development (Bruner, 1990; Vygotsky, 1978; Wertsch, 1991). Because the child is a novice communicator, an adult in the conversational dyad serves as the expert who often creates conditions that make for effective communication. The difference between what a child can accomplish alone and what she can accomplish with an adult’s (or more capable peer’s) mediation or assistance is termed the zone of proximal development (Vygotsky, 1978). What a child accomplishes independently is her developmental level.

For example, the zone of proximal development can be seen in situations in which an adult interprets or mediates a child’s attempts at communicating. In this setting, the adult is providing a supportive scaffolding that gives a child opportunities to participate in a conversation. The child’s communicative attempts are supported by additions or clarifications by the adult. Harris (1990) pointed out that the success of these scaffolded conversations depends on the adult’s sensitivity to and interpretation of the child’s communicative attempt. The most effective scaffolding promotes the highest level of functioning with the lowest level of support.

In the example that follows, a mother and her daughter are in a homemade tent in their backyard, which has been constructed of blankets draped over lawn chairs and a rope strung between a tree and a swing set. The daughter, Allison (age 2), has
been playing in the tent without her shoes on. Because it is April in the Midwest and a bit cool to be going barefoot, her mother decides it is time for Allison to put her shoes and socks back on. Her mother uses scaffolding to engage Allison in a rhyming song as she puts on Allison’s shoes and socks. Not only does this distract Allison from protesting over putting on her shoes and socks, but it provides a way for Allison to learn more about a song that she had heard previously, enabling her to participate in re-creating the rhyming song.

Mother: Allison, come here and get your socks and shoes on [draws Allison onto her lap, and begins to put her socks and shoes on].

Allison: [squirms, resisting] Don’t.

Mother: Allison, want to sing? How about [begins to sing] Four little ducks went out to play [continues with shoes and socks throughout this singing] over the fields and far away. Mama Duck said, “Quack, quack, quack, quack” and only three little ducks came back. [pause] Three little ducks went out one day over the fields and far away. Mama Duck said [pause]

Allison: Quack, quack, quack.

Mother: How many ducks came back, Allison?
Allison: One [singing tone] [holds up one finger]
Allison: [joins in, softly] Went out to play . . .
Mother and
Allison: Over the fields and far away . . .
Allison: One little duck, quack, quack, quack . . .
Mother: [nods head]
Allison: One little duck [indecipherable] quack, quack [sings alone, with fingers up on one hand, looking at fingers], four little ducks, four little ducks [indecipherable], three little ducks, quack, quack, four little ducks [pause] four little ducks . . .

Allison’s shoes and socks are now on, and Allison becomes distracted by her 4-year-old sister, who is also playing in the backyard. Allison leaves her mom’s lap, and the singing ends. Two minutes later, Allison is observed singing the duck song to herself as she walks in the backyard.

In this segment, the mother’s scaffolding took the form of beginning the song and then pausing at predictable points in the song for Allison to participate. The mother verbally faded away when Allison began to sing and accepted Allison’s version of the song. This type of linguistic support was effective in initially engaging and sustaining Allison in this routine. The observation of Allison repeating a version of the song to herself only moments later indicated that Allison was then able to sing the song on her own.

Not only does the concept of the zone of proximal development provide us with an idea of development to come, but it emphasizes the crucial role of adults in children’s development of language. Adults serve as mediators who introduce children to higher levels of functioning within a supportive scaffolded setting. Psychologists have concluded that it is not possible for children to imitate something that is beyond their respective developmental levels. Thus, when a child such as Allison successfully incorporates some of the new behaviors (i.e., linguistic structures or vocabulary), it is not simply imitated behavior but a reflection of the developmental readiness of the child for acquiring more advanced language knowledge.

Cambourne’s work and the role of the environment in facilitating oral language development. The role of the environment in supporting and facilitating children’s language development has been further described by Cambourne (1988, 1995). He identified eight conditions that support oral language development: immersion, demonstration, engagement, expectations, responsibility, approximations, employment, and response. In each condition, specific environmental factors are present, along
with “particular states of being (doing, behaving, creating)” (1995, p. 184). Cambourne describes these conditions as taking place concurrently and interactively, providing a context that facilitates oral language development (see Table 2.2 for a summary). These conditions are:

- **Immersion.** Young children are surrounded by language as it is used by others in their environment. Beginning at birth, children hear the conversations of their parents, siblings, and others in their environment. Children who are born deaf or who are raised in isolation do not experience this immersion in oral language, and thus their language development is impaired.

- **Demonstration.** As children are immersed in their home language, they see specific demonstrations of how language is used to communicate and how it is used differently in different settings (i.e., pragmatic language knowledge). For example, at the family dinner table, an oral request to pass a serving bowl of salad is likely followed by the response of passing the bowl to the person who requested it. This demonstrates how language can function to serve a particular purpose or meet a specific need.

- **Engagement.** Young children are encouraged to pay attention to the language interactions around them and to become involved in those interactions. When storybooks are shared with toddlers, the book sharing is dependent upon the interest and attention of the toddler. We know that selecting appropriate picture books and welcoming the toddler’s questions and comments can actively engage the toddler in the book sharing.

- **Expectations.** Parents, family members, and others in a child’s environment communicate to the young child the expectation that he or she will learn to talk. Adults and siblings directly address a young child in conversation-like interactions long before he or she can speak a word. The expectation that children will become “talkers” is very clearly communicated.

- **Responsibility.** Young language learners decide how they will respond to language demonstrations. In taking this initiative, a young child determines what message he wants to send and engages in sending that message. For example, while Mia was out for a walk with her 21½-year-old son, Josiah, she noticed a small black dog and its owner walking toward them. As they approached, Mia said to Josiah, “Look at the little doggie.” Just as they met on the sidewalk and passed by, Josiah exclaimed, “No tail!” In this instance, Josiah had decided to comment on what was most important to him—that the little dog did not have a visible tail. Josiah’s initiative in responding to his mother’s utterance showed that he was active in deciding what aspect of the setting on which to comment.

- **Approximations.** When young children begin to speak, their attempts are approximations of adult words and pronunciations. This “baby talk” is enthusiastically received as “real talk” by parents and others, along with the expectation that these early forms of speech will eventually become more
<table>
<thead>
<tr>
<th>Condition</th>
<th>Description</th>
<th>Example</th>
</tr>
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<tbody>
<tr>
<td>Immersion</td>
<td>Child is surrounded by language used by others.</td>
<td>At home, the child hears conversations of family members throughout the day.</td>
</tr>
<tr>
<td>Demonstration</td>
<td>Child witnesses how language is used by others for specific purposes.</td>
<td>At the family dinner table, the child hears a request to pass the salad and listens to a sibling tell about her day at school.</td>
</tr>
<tr>
<td>Engagement</td>
<td>Child is encouraged to participate in language interactions.</td>
<td>During storybook sharing, the child is encouraged to name the objects pictured in the book.</td>
</tr>
<tr>
<td>Expectations</td>
<td>Beginning in infancy, adults and siblings address child expecting a response.</td>
<td>At snack time, the parent asks the child if he wants a graham cracker or a cheese cracker and waits for the child to respond.</td>
</tr>
<tr>
<td>Responsibility</td>
<td>Child creates message in response to language of others.</td>
<td>When her mother says, “it’s really chilly today,” the child responds, “What does chilly mean?”</td>
</tr>
<tr>
<td>Approximations</td>
<td>Child’s early forms of speech are accepted as “real communication” by others.</td>
<td>When the child is asked if he wants some juice, the child responds “ju-ju”. This is accepted by the parent as “Yes, I want juice.”</td>
</tr>
<tr>
<td>Employment</td>
<td>Child is given opportunities to “try out” his/her developing language competencies.</td>
<td>During a family mealtime, the child is encouraged to tell about his experiences while playing at the park earlier that day.</td>
</tr>
<tr>
<td>Response</td>
<td>Child receives feedback on their use of language to communicate.</td>
<td>While on a walk, the child sees a small, fluffy dog, and calls it a kitty. His mother says, “Oh, it’s a small dog, not a kitty. See it does not have a long, fluffy tail like a kitten.”</td>
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conventional. For example, Scotty, a toddler, referred to his sister Brianna as “Anna.” As he progressed through the preschool years, his pronunciation went from Anna, to Banna, and then to Bianna. Finally, when he was in kindergarten, he had mastered the conventional pronunciation of her name, Brianna.

- Employment. Young children need to have opportunities to try out their developing language competencies—both with other people and when they are alone. Encouraging young children to participate in conversations at mealtime, while riding in a car, and during picture book sharing provides important opportunities to practice communicating with others. Children also seem to need times when they can talk to themselves, such as before falling asleep or when looking at picture books independently.

- Response. When young children are expressing themselves verbally, they need to receive feedback responses from significant people in their environment. This condition is present when a toddler uses an approximation for the word cracker and the adult responds by saying, “Oh, you want a cracker?” In this instance, the adult’s response confirms the intent of the child’s utterance as well as filling in the rest of the words that were implied.

**Implications of the interactionist perspective for early childhood classrooms.** The interactionist perspective encourages teachers to focus on providing many social interactions in which oral and written language are used. Many “talking” opportunities would be provided from infancy onward so that children can begin to understand the ways in which language functions. In providing these opportunities, the focus would also be on creating a positive emotional context for this communication that provides motivation for continued attempts to communicate with others. Throughout this text, the focus will be on the interactionist perspective. It provides a framework for understanding the complex ways children develop language competencies as they interact with people and objects in their environment. The interactionist perspective also acknowledges that “nature and nurture are inseparably intertwined” (Gopnik, Meltzoff, & Kuhl, 1999, p. 131).

### THE BRAIN’S ROLE IN LANGUAGE DEVELOPMENT

This complex interaction between nature and nurture is clearly evident in research that centers on the brain’s role in language development (Bergen & Coscia, 2001). In this section, the contributions of both nature and nurture will be explored in understanding the brain’s role in language development. The field of research that has focused on the study of “language in the brain” is referred to as neurolinguistics (Obler & Gjerlow, 1999, p. xv). This research often incorporates anatomy, physiology, and biochemistry as these areas relate to language processing (Owens, 2001).
The human brain appears to be “prewired” for the development of language (Anderson & Lightfoot, 2002; Chomsky, 2002; Eliot, 1999; Obler & Gjerlow, 1999; Pinker, 1994). As specific regions of the human brain mature, language development occurs. This maturation begins in the womb as the fetus develops. This sets the stage for later complex development of the neural connections in the brain that are involved in receiving and producing language. In addition to brain maturation, a critical requirement for language development is that it needs to occur in environments where language is used in social interaction. In this way, both nature and nurture are involved in language development.

The brain and spinal cord compose the **central nervous system**. The spinal cord begins in the brain stem area and continues down the center of the back, protected by the bone structure of the spine. Communication of brain messages to the rest of the body takes place through the spinal cord and peripheral nervous system (Lamb, 1999; Obler & Gjerlow, 1999). The **peripheral nervous system** involves the nerve pathways that connect the spinal cord with all parts of the body. The peripheral nervous system carries out the actions signaled by the brain not only for language but for movement as well. The focus here will be on the structure of the brain cells along with the main areas of the brain and their relation to language development. (See Figure 2.2.)

**FIGURE 2.2**
Structure of the Outer Layer of the Left Hemisphere

![Diagram of the brain showing key areas and their functions]
Complex Structure of Brain Cells

The nerve cells (also called neurons) in the brain are composed of three main parts: a cell body, axons, and dendrites. **Axons** carry information away from the cell and **dendrites** carry information to the cell body. Each axon is encased in a layer of fat cells called the **myelin sheath**. This protects the nerve cells and makes it possible for the nerve impulses to travel faster (Eliot, 1999). The end of the axon branches out like a tree branch. This branching area, called the **axon terminal**, connects to the dendrites of an adjacent cell body (Santrock, 2001). The area of interconnection between the axon terminal of one cell body and the dendrites of another cell body is called the **synapse** (Puckett & Black, 2001). During prenatal development and early childhood, there is rapid growth of these synapses. Infants’ early experiences stimulate the formation of neural connections. In this sensorimotor period, the “sights, sounds, smells, touches, language, and eye contact help the brain connections to take place” (Santrock, 2001, p. 135). Figure 2.3 illustrates the structure of the neuron and synapse.

Main Areas of the Brain

The **cerebral cortex** is the outer layer of the cerebrum. It covers the brain like a cap and accounts for about 80% of the volume of the brain (Santrock, 2001). This area of the brain has a critical role in perception, thinking, and language. The **cerebellum**, 

**FIGURE 2.3**
Structure of Neuron and Synapse
an area in the lower back region of the brain, is associated with movement and coordination (Wolfe, 2001). The cerebellum transmits signals to the muscles that control the various parts of the speech mechanism to produce speech sounds (Lamb, 1999). For example, for a person to speak, the brain must send messages to the lips, tongue, jaw, larynx, pharynx, muscles of the rib cage, and diaphragm to coordinate the production of speech sounds (see Figure 2.4). For a person to write, a message must be cognitively encoded in a writing system, and the muscles of the hand must be coordinated to produce the appropriate written symbols. Therefore, both the cerebral cortex and the cerebellum are involved in comprehending and producing language.

The brain is divided vertically into two sections called hemispheres. During the maturation and growth of the brain, each of the hemispheres develops certain cognitive functions. This process is called lateralization. Research with young infants has documented more brain activity in the left hemisphere than the right when the infant is listening to sounds of speech (Hahn, 1987, in Santrock, 2001). There is common agreement among neurolinguists that both speech and grammar functions are localized in the left hemisphere; however, neurolinguists also agree that both hemispheres are involved in the more complex forms of communication, such as the use of metaphor and humor, as well as pragmatic knowledge of language (Santrock, 2001).

**FIGURE 2.4**
The Speech Mechanism
Areas of the Brain Associated with Language Production and Comprehension

The critical role of the brain in language is evident from studies of individuals who have experienced brain damage and subsequently lost specific language capabilities. This general loss of language is called aphasia (Obler & Gjerlow, 1999). Studies of children and adults who have experienced brain damage have identified specific areas of the brain associated with language competencies involved in receptive language, productive language, oral language, and written language (Obler & Gjerlow, 1999).

Early research by two neurologists, Paul Broca and Carl Wernicke, reported that damage to specific areas of the brain was associated with specific loss of language capabilities (Crystal, 1987). Broca’s research on patients with brain damage in the mid-1800s found that the loss of speech production appeared to be the result of damage to the lower area of the left frontal lobe of the cerebrum. This area is now referred to as Broca’s area, and damage to this area can result in a condition referred to as Broca’s aphasia (refer to Figure 2.2). Although speech production is slowed and grammatical structures are missing, there is not impairment in the comprehension of speech or in the ability to communicate in written language (Owens, 2001).

About that same time, another neurologist, Carl Wernicke, reported a different type of speech disorder that was associated with damage to a region of the brain in the area to the back and top of the temporal lobe. In this condition, the individual’s fluency of speech is normal; however, comprehension and the ability to construct meaningful sentences are significantly impaired. Words that are phonemically similar but that have no semantic relation to what appears to be the message communicated may be substituted. For example, wine may be substituted for why (Obler & Gjerlow, 1999). This area of the brain is referred to as Wernicke’s area, and the condition is referred to as Wernicke’s aphasia (refer to Figure 2.2).

Additional research has used brain-imaging (metabolic and noninvasive) techniques as well as brain stimulation technology to further document the localization of language functions in the brain (Bergen & Coscia, 2001). Current research in neurolinguistics has also documented the complexity of the brain in language development, leading to the conclusion that the “whole brain contributes to the broad range of language abilities” (Obler & Gjerlow, 1999, p. 12); language abilities are not confined to the left hemisphere of the brain. The exact way the brain mediates between thoughts and linguistic expression is not completely understood. In addition, recent research has documented differences between individuals in how language is localized in specific brain areas (Anderson & Lightfoot, 2002).

The next section will focus on specific interaction patterns occurring at home, in the community, and at school that influence language development.

CONTEXTS OF LANGUAGE DEVELOPMENT

Home, community, and school are the environments in which children’s language develops. The important role of social and cultural contexts for language development is the focus of the interactionist perspective discussed earlier in this chapter.
Language is acquired in a social setting; it cannot be acquired in a solitary setting. A language learner must have interaction with another person who is a language user.

By understanding the types of contexts and interaction patterns in which children experience language, teachers are better able to establish classroom settings that foster language development. First, we will consider specific patterns of adult-child interaction. Then we will examine specific features of home, school, and community environments that influence language development. The final section of the chapter provides an overview of the role of teachers in establishing and maintaining contexts that foster language development.

**Patterns of Interaction: Overview**

In this section, several specific patterns of adult-child interaction will be described. Each of these patterns plays a role in enhancing language development. Each pattern is present in some manner throughout early childhood. Each pattern may be modified in some way to respond to the developmental level of each child, but the characteristic nature of each pattern of interaction is maintained. (See Figure 2.5.)

**Eye contact and shared reference.** We begin communicating with children through establishing eye contact and **shared reference**. This is a basic interaction pattern (Tronick, Als, & Adamson, 1979). Eye contact is established between an adult and a child and involves jointly focusing on an object or event. Through eye contact and shared reference, objects and events are contemplated and become subjects of conversation. When eye contact and shared reference are not established, communication often breaks down or is not even initiated as there is no clear common focus.

Eye contact is usually established by an adult first looking directly at a child and gesturing (pointing) or speaking a short, attention-getting phrase, such as “Look.” It is important for the adult to be close to the child and position herself so that the child can look directly into her eyes (Manolson, 1992). Sometimes the adult touches the child briefly on the shoulder or arm to get his attention. If eye contact and shared reference are not established, the attention-getting phrase and gesture may be repeated. If repeated attempts are not successful, then the interaction may be discontinued as the child may not be interested or sufficiently alert to engage in the shared activity. When this routine has been repeated successfully with infants (6–12 months of age) over time, they begin to respond to the verbal phrase or word by looking at the speaker and then to the location signaled by the adult’s gesture. After shared reference is established, communication about the object or event occurs.

Early interactions with children are more individualized, so that eye contact and shared reference with infants and toddlers occur with one child at a time. When classroom activities involve multiple children at one time (such as in preschool, kindergarten, or primary rooms), teachers establish eye contact and shared reference
with several children for a single activity. As teachers interact with more than one child at a time, they spend more time establishing eye contact and shared reference. Though the technique is similar to the one described for infants, the attention-getting language used with toddlers and older children will gradually become more complex and elaborate. Children who do not participate in these contexts of shared reference often lose out on the communication and thus the instruction.

Maintaining shared reference may require constant monitoring and verbal interaction to keep a child focused on the desired object or event. Animated speech or speech with varied intonations and gestures is often effective in maintaining a child’s attention. For example, when sharing a storybook with an infant or a toddler, a parent may use animated speech, sound effects, and gestures to maintain the child’s attention.

**Communication loop.** All patterns of interaction are characterized by a communication loop, a circular or cycle-like sharing and exchanging of the roles of speaker and listener (see Figure 2.6). The loop begins with a speaker initiating conversation and continues to a listener, who then becomes a speaker while the first speaker listens. Thus, a conversation may continue through many turns, during which time topics of conversation may be introduced, elaborated, or changed. The communication loop is severed whenever one of the participants fails to continue participating, either by not listening to the speaker or not responding as a speaker. With infants, a communication loop is first initiated through eye contact and shared reference. Rather than a verbal response from the child, the child’s eye contact and focus of shared reference serve as active responses in this communication loop. This communication loop can also be thought of as a continuously spiraling loop that changes or develops as the conversation develops because the participation by both as speakers and listeners influence the ongoing interaction.

The notion of a communication loop is also described in Bruner’s (1978, 1983) language acquisition support system (LASS). The communication loop is a routinized, repeated interaction between a child and an adult. In this interaction, a series of turns defines the context and creates a structure for further negotiation or clarification of the meaning of actions or objects in the environment. Initially the adult does most of the work in sustaining the interaction. As a child’s ability to participate develops, the child assumes more control over the interaction.
For example, in the following conversation between a teacher and a preschool child, the teacher and child take turns talking first about the child’s new snow boots and then moving on to talk about playing in the snow. As the conversation continues, the child initiates a change in the conversation topic with her questions about playing outside and making snow angels.

**Child:** I wore my new snowboots.

**Teacher:** Yes, those are bright pink snowboots.

**Child:** I can walk in snow.

**Teacher:** Yes, because your snowboots will keep your feet warm and dry.

**Child:** Can we play outside?

**Teacher:** Yes, we will go outside after snack. What would you like to do outside?

**Child:** Make angels. Can you make angels?

**Child-directed speech.** The specific language that adults use with young children is also distinctive and serves to enhance language development. This specific language has been termed **child-directed speech (CDS).**

In a review of research, Pine (1994) identified eight characteristics of speech directed toward children. Because this speech is often in the form of phrases or single words, it is referred to here as “utterances” rather than sentences. When compared to adult-to-adult speech, speech utterances typically addressed to young children are characterized by the following:

1. Utterances are short and well formed.
2. Utterances have fewer false starts than adult-to-adult speech.
3. Utterances are not syntactically complex.
4. Utterances have a higher pitch and intonation is more exaggerated.
5. Utterances are redundant or repetitive in part or in whole.
6. Utterances have a slower rate or tempo.
7. Utterances are more closely tied to the immediate context.
8. Utterances have discourse features that encourage children to participate and to clarify the child’s responses.

Researchers have debated whether the existence and use of CDS is a conscious vehicle for “teaching” language or whether it is an intuitive response by adults (or other fluent, though younger, language users) when they are attempting to communicate with children who are just beginning to communicate (Newport, Gleitman, & Gleitman, 1977). This latter position is supported by the observation that speech resembling CDS is often used by English speakers when they attempt to communicate with non-English speakers or their pets (Pine, 1994). CDS has also been observed in settings where older siblings or children are attempting to communicate with younger children.

The role of CDS in language development may be a combination of both informal teaching and communicative necessity. Because these specific characteristics are successful in enhancing communication between fluent and novice or beginning speakers, CDS exposes a novice to aspects of the language and the act of communication that enhance the child’s language development. When utterances are short and well formed, a child can process the utterances more efficiently, and a more accurate model utterance is provided to the young language learner. Utterances that have fewer false starts also provide a young child with better language models to facilitate comprehension. Utterances with many false starts would be confusing and impair communication. Utterances that are syntactically simple (few complex sentences and subordinate clauses) would also facilitate young children’s linguistic processing.

Speech that has a higher pitch and more exaggerated intonation would hold children’s attention more and enhance perception of speech sounds due to the wide variety of intonation. Utterances that are redundant, either in part or in whole, facilitate comprehension of meaning and context through the repetition of key aspects of the utterance. When speech directed to young children is at a slower pace or tempo, it allows for linguistic processing: it takes time to process speech cognitively. If you have ever been in a setting where you were a nonnative speaker, you may have wished that the native speakers would just speak more slowly.

Utterances that are more closely tied to the immediate context foster language development. When utterances refer to objects or people present in the immediate context, a young child can make a visible connection between the oral symbol and its actual referent.

Discourse features of CDS that encourage children’s participation include questioning (see the following section) and conversational “rules” such as turn taking,
active listening, and maintenance of eye contact. The presence of these features in CDS increases participation by children and furthers their language development.

Adults actively monitor the success of their speech to a young child and change their expectations for a child’s responses as the child’s levels of language competency increase. Some differences between the interaction styles of mothers and fathers have been noted (Barton & Tomasello, 1994). Mothers typically adjust their speech to young children to a greater extent and in more different ways than do fathers or older siblings. While initially this might seem to indicate that communication is less beneficial when fathers and older siblings are involved, young children’s communicative competence might be enhanced in this type of setting, where they must respond or adapt to the communicative demands of others rather than having the style of communication always adapted to them.

Verbal mapping. The verbal mapping pattern occurs when an adult verbally describes (not just names) an object or action in a level of detail appropriate to the developmental level of the child with whom the interaction is occurring. Verbal mapping employs language that fits the situation, providing the symbols for a child’s subsequent representation of that event. In most cases, verbal mapping serves to orally identify the concepts being experienced. Shared reference and eye contact are essential for the effectiveness of verbal mapping. Verbal mapping is monologic in nature. The adult provides a verbal description of what is occurring or what is being experienced or seen. The mapping episode may be short, or it may be extended, depending on the situation and the child’s attention to the adult’s speech.

This pattern of interaction occurs with all ages of children and can enhance development of all five aspects of language knowledge: semantic, syntactic, phonetic, morphemic, and pragmatic. During infancy, verbal mapping provides a narrative to daily routines of dressing, eating, and exploring. At later developmental stages, verbal mapping is crucial during new experiences because it involves modeling, or showing how language is applied to those experiences.

For example, when helping a toddler put on shoes, an adult engages in verbal mapping as she describes what she and the child are doing: “Where are your shoes? [Child gestures.] Yes, those are your shoes. Bring me your shoes. [Child gives shoes to adult.] Let’s put this shoe on first. [Holds shoe to child’s foot.] Slip your foot into the shoe. [Child responds.] There you go. Now let’s tie it up. [Ties shoe.] Now let’s put on your other shoe.”

As another example, a teacher stops by the classroom’s block corner and finds that children are engaged in building a city. Her verbal mapping focuses on describing the types of buildings the children have made. The teacher’s mapping continues briefly and is contingent on the children’s responses to her. She focuses on providing descriptions of their actions and accomplishments.

Verbal mapping also occurs as children share discoveries with their teachers, parents, and other adults. While outside on the playground, a child might run up to a teacher, holding a caterpillar on a leaf. The teacher’s responses might include the following instances of verbal mapping: “What do you have here? Oh, yes, it is
a caterpillar. It has yellow and black stripes. Can you see how it moves? Slowly, slowly, little by little. It can even climb up a hanging leaf. See where its eyes are? It looks furry. See the tiny hairs that cover its body? Look at all of its feet.”

Verbal mapping is not just idle chatter on the part of an adult. Instead, it involves a conscious focus by the adult on the concepts and vocabulary relevant to the ongoing learning activity. To be effective, verbal mapping needs to take into account the developmental level of children’s receptive language skills. Because verbal mapping occurs as action is ongoing, it occurs when the referents for the objects and actions are present. This provides children with important opportunities for conceptual development. As the specific concepts are used in verbal mapping, children are exposed to syntactic, pragmatic, morphemic, and phonemic knowledge related to those concepts. In this way, verbal mapping extends and expands children’s receptive language and serves as a basis for their productive–expressive language as well.

**Questioning.** Adults ask children questions beginning in infancy. This interaction pattern occurs frequently. Questions asked of very young children are often answered by an adult, who takes both parts in the conversation, because the infant is not yet verbally responding. An infant’s nonverbal responses—gestures and facial expressions—may be interpreted by many adults as responses to their questions, even if the child’s responses are unintentional or random. The way adults respond to children’s unintentional responses, by assuming the verbal or nonverbal behavior as an intended response, sets up an interactive pattern in which the child begins to participate in a dialogue of sorts. The rising intonation that ends a question, the anticipatory facial expression, and gestures of the adult encourage children to respond. Asking questions is a way of “passing the conversational turn” to the child (Pine, 1994, p. 19).

Questioning takes several different roles in communication with young children. Questioning can focus on clarifying something the child said previously. Sometimes questions are used to ask the child to repeat what was said earlier or to rephrase an utterance. At other times, questions are used to determine the child’s knowledge or awareness of a concept or an action. This “recitational questioning” is also found in classrooms, where a teacher asks a student a question to which she, the teacher, knows the answer, but is checking to see if the child knows the answer. Informational questioning occurs when an adult seeks information from a child that the adult does not know (e.g., “Where are your shoes?”).

Questioning is illustrated in the following example of a conversation between a 4-year-old boy and his teacher. When the child selects a book on trucks and approaches his teacher during the independent activity time, he asks her to read it to him. After they are settled in the book corner, the book sharing begins.

**Teacher:** [reads title of book] Watty Piper’s Trucks. Oh, look, what’s happening in this picture?

**Child:** It’s cleaning the street.

**Teacher:** Yes, that truck is a street sweeper. Let’s turn the page and see what’s going to happen next. Look at this big red truck. What kind of truck is it?
Theoretical Perspectives and Contexts of Language Development

Child: A fire truck! [pause] I saw a fire truck today.
Teacher: You did? When did you see it?
Child: At my house.
Teacher: Did the fire truck go by your house?
Child: Um-hum. Woo-woo-woo! [sound of fire siren]
Teacher: Wow, you can really make the noise of a fire engine siren! Why does this fire truck have a ladder?
Child: To help people.

The teacher’s questioning involved the three types of questions. She asked a recitational question when she asked, “What kind of truck is it?” When she asked, “When did you see it?” she was asking for information she did not know. “You did?” was a question that requested clarification of what the child had said.

Children experience responding to these three types of questions—recitational, informational, and clarifying—from early childhood on and gradually begin to incorporate the use of questioning in their productive–expressive speech. At about age 8–9 months, children show intonation patterns accompanied by gestures (pointing) as if they were asking questions. As children acquire more complex language and reach the early preschool years, questioning others becomes one way they find out information.

**Linguistic scaffolding.** Using language to provide a scaffold for children’s attempts to communicate is an interaction pattern used frequently with infants and older children. **Linguistic scaffolding** refers to a supportive manner in which adults or older children interact with young children in a dialogue (Bruner, 1978; Wells, 1986). This scaffolding assists children in participating at a higher level than they could perform independently. By exploring children’s participation in scaffolded interactions, it is possible to see their future learning and development (Dixon-Krauss, 1996; Vygotsky, 1978).

Linguistic scaffolding involves supporting children’s speech by recognizing their linguistic capabilities and assisting them in building a conversation. Linguistic scaffolding may include the use of questioning, expansion, repetition, or a combination of these. The questioning used during linguistic scaffolding serves to lead the child ahead in the dialogue or discourse and maintains the verbal interaction. For example, in the following dialogue, questioning is used to maintain the conversation. Without the use of questioning, the dialogue would stop.

Child: I ate at McDonald’s with Grandma and Grandpa.
Teacher: Oh, you did?
Child: Uh-huh.
Teacher: What did you eat?
Child: Cheeseburger, Coke, fries.
Teacher: Did you go on the playground?
Child: Yes.
Teacher: What did you play on?
Child: The slide and the horses.

Through the use of questioning, the child became engaged in sharing more complete information about lunch with his grandparents.

Expansion, or recasting (Camarata, 1995), is another aspect of linguistic scaffolding. It is used to “fill out” what a child says (Reich, 1986; Wells, 1986). Expansion is also a way to model more complex syntax, morphology, semantics, and correct pronunciation. In the following dialogue, expansion (indicated by roman type) enhances syntax and morphology by creating complete sentences and adding inflectional endings and correct past-tense forms.

Child: New shoe [looking down at his feet].
Adult: Oh. You have new shoes.
Child: [Nods and grins.]
Adult: What color are your shoes?
Child: Blue.
Adult: Yes. Your shoes are blue. Where did you get them?
Child: Mommy buyed at K-Mart.
Adult: Oh, your mother bought them at K-Mart.

Repetition is an aspect of linguistic scaffolding. In the previous example, the adult’s repetition of specific key words (shoes, blue, K-Mart) used by the child served to reinforce pronunciation and to confirm the meaning of what the child said.

Scaffolding often occurs as a result of an adult’s intuitive sense that young children need assistance and support in developing and carrying on a conversation. In such instances, adults may not be aware they are engaged in linguistic scaffolding. At other times, they may be aware that they are scaffolding the interaction for a child. Strategic scaffolding involves a conscious awareness by an adult that he is teaching or modeling to a child how to carry on a conversation or how to describe an event or object (Beed, Hawkins, & Roller, 1991). Strategic scaffolding provides stronger support for a young child’s verbal interactions because it is used consciously by a teacher or an adult and may reflect specific educational or developmental goals for the child. It is important that adults remain sensitive to communication cues from children with respect to topic interest and intended meaning. This involves confirming children’s intentions and extending their topic or inviting the children to extend the topic (Wells, 1986). In addition, adults should form and phrase their responses at the level of the child’s communication or just beyond that level with respect to syntax, vocabulary, or oral pronunciation to create a zone of proximal development.

Mediation. Mediation is a type of interaction that focuses on simplifying the learning stimulus or task to facilitate the language interaction with, and
comprehension by the child. The nature of mediation appears to be influenced by an adult's awareness of a child's level of comprehension (receptive language) and ability to respond (expressive language). The adult serves as a mediator, a go-between for the child and the learning stimuli, giving the child just enough support to accomplish the task at hand (Gopnik et al., 1999). The importance of this type of interaction in learning was first described by Vygotsky (1978), who emphasized the role of language in transmitting cultural knowledge.

At the preschool level, mediation may be seen in spontaneously altered texts as storybooks are shared orally. When teachers encounter text they feel is too difficult for children to understand, they spontaneously change the text to fit their understanding of the children's semantic and syntactic development. Sometimes teachers may mediate the text by pausing after a new concept or label is introduced in the text and explaining the concept. Mediation may also occur in home settings, where a parent simplifies the explanation of a complex event such as a response to a child's question about why it rains.

Communication loops, shared reference, CDS, verbal mapping, questioning, linguistic scaffolding, and mediation all facilitate language development. Through these patterns of interaction, children's language development is enhanced. These interaction patterns are present in home, community, and school settings, although there may be some modifications due to the child's level of development and the interaction style of the adults or older children in the environment.

Parents often use language to mediate and support children's interactions with specific tasks or learning activities.
Home, Community, and School Settings

The settings in which children develop their language competencies vary in many ways. The patterns of interactions may vary along with the specific form of language that is used. Cultural diversity also increases the variations in communicative setting. Cultures develop their own distinctive language, which reflects the knowledge, belief systems, and phenomena within each culture. Languages also differ in terms of the five aspects of language knowledge: phonological, semantic, syntactic, morphemic, and pragmatic.

Even without considering social–cultural differences between distinct groups, home and school environments still vary in the ways communication occurs in those settings. At home, verbal interactions may have more of a focus on the immediate context of events, actions, and objects present in the home (Wells, 1986; Wilkinson, 1984). In home settings, children interact with a limited number of people with whom they have daily experiences. Their conversations with adults are more frequent and involve more “turns,” or a wider range of topics, and involve more questions from the child (Tizard, 1981). At school, children interact with a much larger number of people, and their interactions are often governed by school rules or protocol (Geekie & Raban, 1994; Mehan, 1979).

Verbal interactions with children at home are more tailored for each child or, at most, shared with one or two other children. In contrast, at school, a child must often share the teacher in conversation with a group of students. The result is that children at school have less opportunity for conversations with adults. In addition, their relationship to the teacher is less personal, and the dialogue that occurs is often teacher directed to focus on specific instructional objectives and activities (Geekie & Raban, 1994). Verbal interactions at school often focus on events and objects not physically present in the classroom. This decontextualized speech is a contrast to the type of speech experienced by children at home. Further, in school settings, the wait time between adult questions and expected children’s responses is also much shorter than that found in home settings.

Language development is also influenced by social routines. Routines may be linguistically patterned or more informal. They are usually culturally based, influenced by family, community, or both. In linguistically patterned routines, children are introduced to the routine through adult or teacher direction. Specific responses are expected (no open-endedness), and specific concepts and skills are taught directly. Children participate in a variety of formal or fixed linguistic routines from infancy on. Pat-a-cake and peek-a-boo are two common routines to which infants are often introduced. For older children, formal school-based linguistic routines may include saying the Pledge of Allegiance, taking attendance, greeting someone in the morning, and saying good-bye in the afternoon.

Informal, home-based routines may involve daily or weekly events in which the child may tag along on a trip to the grocery store or participate in routines involving being dressed, bathed, or fed. Informal linguistic routines also involve turn taking within communication loops. Recitational routines that occur in instructional
settings are also informal linguistic routines. While the exact speech for these routines is not fixed (as it is in the Pledge of Allegiance), the turn-taking, question–answer interaction pattern is routinized.

Within routines, children experience each of the five aspects of language knowledge: phonological, semantic, syntactic, morphemic, and pragmatic. However, social routines emphasize pragmatic knowledge: knowledge of how to use language in different settings. Knowing when and how to say “please,” “thank you,” and “excuse me” is just one type of language-related knowledge learned through social routines. Home social routines that are also part of the larger society allow young children to learn how to interact successfully in school and community settings.

Sometimes vocabulary is also learned during routines. When her preschool teacher was taking attendance at the beginning of the school year, a little girl, Nicole, arrived late and went to the group circle and sat down. Nicole heard the other children saying “Present” when their names were called. When her name was called, Nicole replied, “Well, I’m here, but I don’t have a present.” Her teacher then explained that “present” also meant that she had come to school.

Recent Research on Nature–Nurture Connections and Language Development

Home, community, and school settings are also part of a multidimensional construct known as socioeconomic status. Socioeconomic status/SES is a “complex construct based on household income, material resources, education and occupation as well as related neighborhood and family characteristics” (Hackman et al., 2010, p. 651). Socioeconomic status is also associated with prenatal care (e.g., mother’s health and nutrition), postnatal care, and cognitive stimulation. Each of these factors contribute to the context in which language develops.

Recently, researchers have explored the interaction between nature and nurture with respect to language development. This research has focused on the correlations between brain activation and development and socioeconomic status. Technological advances in the study of brain function and development involving brain imaging and activation have facilitated this exploration. For example, researchers have used neuroimaging to show differences in brain activation during language and reading tasks among children from different socioeconomic status groups (Farah et al., 2008; Hackman et al., 2010; Jednorog et al., 2012; Noble et al., 2006). When compared to children from middle or upper SES, children from low SES environments showed differences in brain activation during reading tasks involving phonological skills (Noble et al., 2006). Recent research has also begun to explore the connection between SES and the development of brain structures (Jednorog et al., 2012).

Implications of this research center on ways in which intervention programs may reduce or ameliorate the factors associated with low SES. For example, it is important that programs be implemented that address prenatal and postnatal nutrition and health as well as specific educational programs and community resources for children and their families (Hackman & Farah, 2009; Hackman et al., 2010; Jednorog et al., 2012).
Chapter 2

Role of Early Childhood Teachers

An early childhood classroom teacher has a critical role in establishing a learning environment in which the language contexts provide opportunities for children to continue developing their language competencies. Through a teacher’s understanding of the importance of verbal interaction and the ways in which it can be enhanced through curriculum planning and implementation, children’s language development can be encouraged. Because informal learning activities are child directed and open ended, it may appear to observers such as parents, upper-grade teachers, and administrators that preschool and kindergarten children are “just playing” and are not engaged in any type of academic or cognitive work (DeVries, 2001; Honig, 2007).

As an early childhood teacher you will need to communicate to parents, colleagues, and administrators the specific aspects of your classroom curriculum and environment that will enhance children’s language development. When this is done, parents, colleagues, and administrators will have a better appreciation of the ways in which children’s educational and developmental needs are being met in your early childhood classroom. You will need to help parents and others understand that these informal learning activities are valuable because they provide an experiential basis for conceptual learning and language development due to active involvement of the learner in the classroom environment. You will also need to provide parents and family members with information on community resources as well as ways in which they can support their children’s language development at home.

SUMMARY

Each theoretical perspective has added to our knowledge of the complexity of language development and to an awareness of the wide variety of language stimuli and contexts experienced by young children. The different theoretical perspectives vary in their focus on the role of nature and nurture as well as the emphasis on one or more of the five aspects of language knowledge. Throughout this text, the focus will be on the interactionist perspective, with its recognition of the ways in which nature and nurture interact. It provides a framework for understanding the complex ways children develop language competencies as they interact with people and objects in their environment.

The complex development of the brain plays a critical role in the development of language. While specific areas of the brain have been associated with specific language processing functions, neurolinguists agree that both hemispheres of the brain are involved in communication.

Children acquire language in a variety of settings and contexts. The ways language is used in each setting and the linguistic features of the language or dialect influence children’s development of language. Through an understanding of the various interaction patterns and the characteristics of the different settings, teachers will
be able to plan and implement appropriate language-related activities to enhance children’s language development.

*** CHAPTER REVIEW ***

1. Key terms to review:
   - universal grammar
   - language acquisition device (LAD)
   - hypothesis testing
   - object permanence
   - schemata
   - preoperational stage
   - imitative speech
   - language acquisition support system (LASS)
   - zone of proximal development
   - developmental level
   - neurolinguistics
   - central nervous system
   - peripheral nervous system
   - neuron
   - axons
   - dendrites
   - myelin sheath
   - axon terminal
   - synapse
   - cerebral cortex
   - cerebellum
   - hemispheres
   - lateralization
   - aphasia
   - Broca's aphasia
   - Wernicke's aphasia
   - shared reference
   - communication loop
   - child-directed speech (CDS)
   - verbal mapping
   - linguistic scaffolding
   - expansion
   - recasting
   - strategic scaffolding
   - mediation

2. Distinguish between these theoretical perspectives: behaviorist, nativist, cognitive developmentalist, and interactionist. Name a theorist–researcher associated with each perspective. What are the implications of each theory for an early childhood education classroom?

3. Describe the zone of proximal development. How does this concept relate to language development?

4. Describe each of the following interaction patterns: child-directed speech, verbal mapping, questioning, linguistic scaffolding, and mediation.

*** CHAPTER EXTENSION ACTIVITIES ***

Discussion

1. In what ways does brain development research document the influence of both nature and nurture on language development?

2. Reread the episode between Allison and her mother presented in this chapter. Determine which interaction patterns were present in this episode. In what ways did each interaction pattern facilitate Allison's verbal engagement?
Observation

1. Observe several activities in a preschool setting. Analyze the ways in which the activities were conducted for the types of language competencies enhanced in the activities. Include a detailed description of the activities and of the children’s verbal and nonverbal behavior.

2. Observe an adult and an infant during feeding or dressing, during a child-care drop-off or pickup, or interacting in a grocery store or another public setting. Describe the verbal and nonverbal interaction with respect to shared reference and eye contact. Include a transcript of the verbal interaction.